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10/775,623	02/10/2004	John David Adamson	P50-0080	1546

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Michelin North America, Inc.
Intellectual Property Department
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EXAMINER

MAKI, STEVEN D

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/775,623	Applicant(s) ADAMSON ET AL.	
	Examiner Steven D. Maki	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1733

1) If applicant desires to claim the benefit of a prior-filed application under 35 U.S.C. 120, a specific reference to the prior-filed application in compliance with 37 CFR 1.78(a) must be included in the first sentence(s) of the specification following the title or in an application data sheet. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications.

If the instant application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

The first sentence of the specification does not recite --This application is a continuation of Application No. PCT/US02/38411 filed December 3, 2002, which is a continuation-in-part of Application No. PCT/US02/18411 filed June 11, 2002.-- Since

Art Unit: 1733

the information concerning the benefit claim was recognized by the office as evidenced by the bibliographic data sheet (which corresponds to the filing receipt), it appears that no petition is necessary. See MPEP 201.11, page 200-68, Rev. August 2005.

2) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "12" has been used to designate both the "antenna" and the "bead". It is suggested to change "antenna 12" (all occurrences) to --antenna 20--.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4) Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the description of "radio frequency device ... comprising: a radio frequency device" appears circular. Also, the relationship between the "antenna at line

Art Unit: 1733

1 and the "antenna body" at line 4 is unclear. In particular, it is unclear if claim 1 requires the antenna body to be embedded in the rubber material. In claim 1, the following changes are suggested: (1) on lines 1-2 delete --having an antenna embedded in a rubber material for operation in a frequency range of at least 130 MHz,-- and (2) on lines 3-4 change "a radio frequency device; an antenna body" to --a radio device which operates at a frequency of at least 130 MHz; an antenna comprising an antenna body embedded in a rubber material--.

In claim 7, "selected from a group comprising" (an improper Markush group) should be --selected from the group consisting of--.

In claim 9, there is no antecedent basis for "the tire". In claim 7, it is suggested to change "the tire" to --a tire--.

In claim 10, the description of "radio frequency device ... comprising: a radio frequency device" appears circular. Also, the description of "the antenna comprising: a radio frequency device" is confusing. In claim 10, the following changes are suggested: (1) on line 3 change "antenna" to --radio frequency device--; (2) on line 4 before "which operates", change "radio frequency device" to --radio device-- and (3) on line 6 change "radio frequency device" to --radio device--.

In claim 15, "selected from a group comprising" (an improper Markush group) should be --selected from the group consisting of--.

In claim 20, there is no antecedent basis for "the transponder" and "the rubber material layer". In claim 20, it is suggested to (1) on line 5 change "the transponder" to

Art Unit: 1733

--a transponder-- and (2) on line 6 change "the rubber material layer" to --a rubber material layer--.

In claim 21, it is unclear if this claim requires embedding the antenna in a tire and/or elastomeric material. Also, there is no antecedent basis for "the elastomeric material" at lines 5-6. As a related matter, it is unclear if another tire is required in claims 26 and 27 or if the same tire is being described and it is unclear what additional limitation is being added by claim 27. The following changes are suggested: (1) in claim 21 lines 5-6 change "the elastomeric material" to --an elastomeric material of the tire--; (2) on lines 7-8 change "an elastomeric material for integration with the tire" to --the elastomeric material of the tire--; (3) in claim 26 change "a tire" to --the tire-- and (4) change "a structural portion of a tire" to --a structural portion of the tire--.

In claim 24, "selected from a group comprising" (an improper Markush group) should be --selected from the group consisting of--.

5) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1733

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7) Claims 1, 9, 10 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Mock et al (US 6062072).

Mock et al discloses a tire having a radio frequency device wherein the radio frequency device comprises a transmitter and an antenna which is in electrical contact with the transmitter. A high frequency such as 400-500 MHz may be used for the signal transmission. See col. 3 lines 53-58. The antenna is vulcanized in the tire sidewall or the tread (e.g. col. 1 lines 59-61, col. 10 lines 1-8) and is therefore embedded in rubber. The antenna is comprised of an "electrically insulated wire". See col. 5 lines 40-41.

As to claims 1 and 10, the claimed radio frequency device is anticipated by Mock et al's radio frequency device. One of ordinary skill in the art would readily understand that "electrically insulated wire" means a wire surrounded by an insulating coating. This insulating coating inherently has a dielectric constant less than a dielectric constant of the tire. The claimed insulating coating reads on the insulating coating of the electrically insulated wire.

As to claims 10 and 19, the claimed insulating coating (claim 10) formed by a rubber material layer (claim 19) reads on the electrically insulating foamed rubber body 161 in the figure 12 embodiment. The electrically insulating foam rubber body 161 inherently has a dielectric constant less than a dielectric constant of the tire.

8) Claims 1-3, 5, 8-13, 17, 18, 21, 23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mock et al (US 6062072) in view of Pollack et al 220 (WO 01/36220) and optionally Crawford et al (US 6044882).

Art Unit: 1733

Mock et al, discussed above, is considered to anticipate claim 1. In any event: As to claim 1, it would have been obvious to one of ordinary skill in the art to provide Mock et al's antenna such that it comprises a wire coated by insulating material having a dielectric constant less than a dielectric constant of a rubber material (claim 1) / insulating material having a dielectric constant less than 3 (claim 5) and to embed the antenna in the rubber material since (1) Mock et al teaches **using electrically insulated wire for the antenna** (col. 5 lines 40-41) and vulcanizing the antenna in the rubber tread or rubber sidewall of the tire, (2) **a wire having an insulating coating thereon is a well known type of electrically insulated wire to one of ordinary skill in the tire art** as evidenced by Pollack et al 220 (page 30) and optionally (3) it is well known in the tire art as evidenced by Crawford et al that conventional tires comprise carbon black reinforced rubber such that **the conventional carbon black reinforced rubber tire is electrically conductive** so that the build up of static charge on moving vehicles can be discharged to the ground through the tire (col. 1 lines 46-62, col. 2 lines 12-22, lines 64-67, col. 3 lines 1-29). Hence, the applied prior art suggests using electrically insulating coating (material having a relatively low dielectric constant) for the antenna and electrically conductive rubber (material having a relatively high dielectric constant) for the tire.

As to claims 2 and 3, the claimed coating thickness of at least 0.02 mm thick (claim 2) / at least 0.1 mm thick (claim 3) for the insulating coating would have been obvious and could have been determined without undue experimentation in view of Mock et al's teaching to use electrically insulated wire; this being especially true in view

Art Unit: 1733

of Mock et al's alternate embodiment in which wires of the antenna are embedded in an electrically insulating foam body 61 having a thickness for example of several millimeters (col. 11 lines 6-24).

As to claim 9, Mock et al suggests embedding the antenna in the sidewall of the tire.

As to claims 8, 17 and 26, it would have been obvious to use a patch as claimed in order to integrate Mock et al's antenna with the tire since (1) Mock et al suggests adhering the antenna onto the tire (col. 1 lines 62-65) and (2) Pollack et al 220, suggests joining an antenna to a tire using a rubber patch which may be conductive (e.g. page 50).

As to claims 10-13 and 18, it would have been obvious to provide Mock et al's tire with carcass reinforcement and carbon black reinforced rubber material layers (e.g. sidewalls) since such tire components are conventionally used in a pneumatic tire as evidenced by Crawford et al.

As to claims 21, 23 and 27, Pollack et al 220's teaching of an insulated (e.g. enamel coated wire) suggests the step of coating a wire with insulating material.

As to claim 25, Mock et al teaches using a dipole antenna for a desired high frequency signal of for example 400-500 MHz (col. 3 lines 53-61).

9) Claims 7, 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mock et al in view of Pollack et al and optionally Crawford et al as applied above and further in view of Brown et al (US 5218861).

Art Unit: 1733

As to claims 7, 15 and 24, it would have been obvious to one of ordinary skill in the art to use the claimed coating material since (1) Mock et al and Pollack et al suggest using insulating coating on the wire and (2) Brown et al suggests using polyester for insulating material on a wire forming an antenna (col. 6 lines 3-4).

10) Claims 4-7, 13-16, 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mock et al in view of Pollack et al and optionally Crawford et al as applied above and further in view of Kenison et al (US 2002/0133942) and/or Parylene Properties / Characteristics.

As to claims 4-7, 13-16, 20, 22 and 24, it would have been obvious to one of ordinary skill in the art to use parylene as the insulating material for the wire forming the antenna in view of (1) Kenison et al's suggestion to use parylene as the electrically insulating coating material for wire forming an antenna (paragraph 89) and/or (2) the disclosure in Parylene Properties / Characteristics that parylene has extremely high dielectric strength and is useful as a coating on wire. As to claims 5-6, 13-14, 20 and 22, note the properties of parylene (e.g. Parylene N) disclosed by Parylene Properties / Characteristics.

11) Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mock et al in view of Pollack et al and optionally Crawford et al as applied above and further in view of Forster et al (US 6630910).

As to claim 25, it would have been obvious to one of ordinary skill in the art to tune Mock et al's dipole antenna as claimed since (1) Mock et al teaches that the antenna may be wave shaped (figure 14) and (2) Forster et al, also directed to a radio

Art Unit: 1733

frequency device for a tire, suggests designing an antenna such that the length of the wave shaped antenna only reaches a certain *designed length* to be capable of receiving signals at the operating frequency of the interrogation reader when the tire reaches a certain threshold pressure (col. 11 lines 1-5).

12) Claims 10-13, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mock et al in view of Crawford et al.

Mock is discussed above. As to claims 10-13, 15 and 19, it would have been obvious to one of ordinary skill in the art to embed the antenna in the silica reinforced tread of Crawford et al whereby the dielectric constant of the silica reinforced tread is less than a dielectric constant of the rubber material layers (e.g. conductive carbon black reinforced rubber layers) since Mock et al teaches embedding the antenna in the tread and notes that electrical insulation does not need to be applied to the tire forming the antenna if the tire material has the desired electrical resistance value (col. 5 lines 36-45). The claimed "insulating coating" (claim 10) wherein "the coating is formed by a rubber material layer of the tire" (claim 18) reads on a silica reinforced tread as disclosed by Crawford et al.

Remarks

13) Forster et al (US 6853347), which like Mock et al teaches an electrically insulated wire, is of interest for the disclosure at col. 15 lines 1-13. US 6853347 is a continuation of 10/228,180 filed 8-26-05, which is a CIP of 10/012206 filed 10-29-01 now US 6630910. The disclosure at col. 15 lines 1-13 in US 6853347 is not found in US 6630910.

Peterson (US 6956283) is cited of interest for describing parylene as being a generic name (col. 9 lines 35-52).

The remaining references are of interest.

14) No claim is allowed.

15) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
January 13, 2006


STEVEN D. MAKI 1-13-06
PRIMARY EXAMINER